Hybrid Truck and Bus Voucher Incentive Project (HVIP) – $26 million

Overview

Hybrid medium- and heavy-duty vehicle technology can significantly reduce criteria pollutant, air toxic and greenhouse gas emissions – particularly in refuse trucks, work trucks, delivery vans, urban buses, and other vehicles with high stop-and-go or idling duty cycles. Hybrid vehicles can also provide significant fuel economy benefits and fuel cost savings relative to their non-hybrid counterparts. Hybrid trucks and buses are now on the market in multiple configurations and classes, but their purchase price is typically too high relative to their diesel counterparts to justify based on fuel cost savings alone.

A large and carefully-crafted hybrid truck and bus voucher project would not only accelerate the immediate commercialization of these vehicles, but would also have significant multiplier benefits. As more vehicles are produced, production costs and sales price should decline to the point where hybrid trucks and buses are competitive with their non-hybrid counterparts, ultimately eliminating the need for incentives. An investment in incentives for new vehicle purchases will also accelerate the development and commercialization of more efficient hybrid vehicles, and hybrids in less traditional applications, such as off-road equipment, marine vessels, and locomotives.

Project Funding

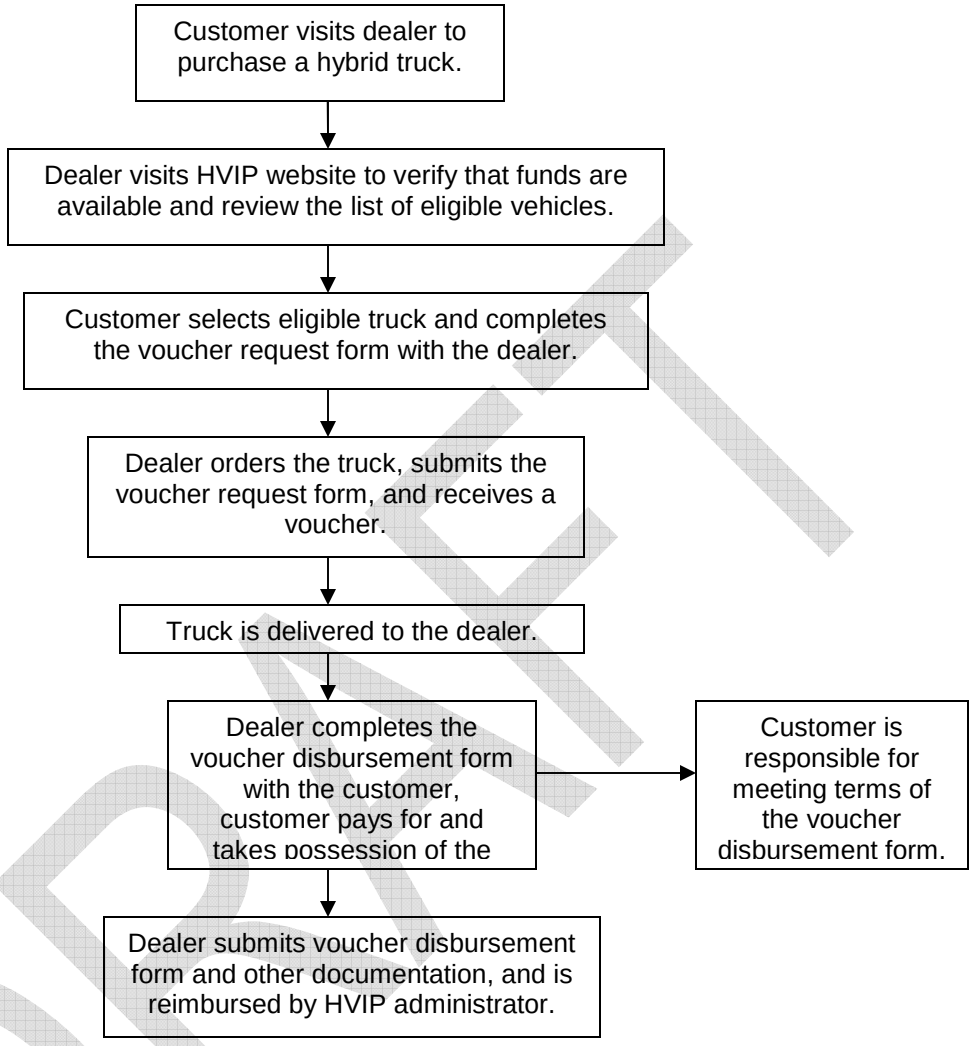
Staff is recommending the FY 2009-10 AQIP Funding Plan include $26 million for the HVIP. This funding amount corresponds to what is needed to accelerate the deployment of approximately the first thousand hybrid trucks and buses in California. In order to most effectively jump start this market, the proposed HVIP is structured to be as straightforward and accessible as possible for vehicle purchasers. This funding amount includes the total funds available for vehicle vouchers, plus up to five percent for project administration.

Project Structure

Figure 1 describes a hypothetical truck dealer sale and voucher reimbursement transaction to illustrate how the HVIP could be implemented. The HVIP would enable the buyer of an eligible hybrid truck or bus to receive a voucher for the incentive amount, which would be redeemable at the time of the vehicle delivery and purchase.

The HVIP website would include a list of eligible hybrid trucks and buses, as well as the eligible voucher amount for each vehicle. The webpage would include a voucher request form for the dealer (in concert with the purchaser) to submit at the time a specific vehicle is ordered, with the voucher to be redeemable at the time the vehicle is delivered. A similar structure would also apply for vehicles which are ordered directly from a hybrid truck manufacturer or a Truck Equipment Manufacturer (TEM).

Figure 1: Potential Hybrid Truck or Bus Purchase Transaction



Vehicle Incentive Amounts

Hybrid vehicles would be eligible for the funding amounts identified in Table 1. This incentive amount corresponds to approximately one-half of the incremental cost of a hybrid truck or bus (relative to the cost of its diesel counterpart). Staff believes this is the minimum voucher amount – given fuel cost savings – needed to make the business case for purchase of a hybrid truck or bus.

Table 1: Staff Recommended Hybrid Vehicle Incentive Amounts

Vehicle Weight	Base Vehicle Incentive[1]	Additional Incentive for ARB Vehicle Certification of Criteria Pollutant Emission Reductions
10,001 – 14000 lbs.	$15,000	$5,000
14,001 – 33,000 lbs.	$25,000	
> 33,000 lbs.	$35,000	

1 – The first HVIP-eligible hybrid truck or bus purchased by any fleet would be eligible for an additional $5,000 voucher.

To further encourage participation by small fleets, staff is also recommending the first HVIP-eligible hybrid truck or bus purchased by any fleet recieve an additional $5,000 voucher.[1] For example, a truck owner-operator purchasing just one truck would be eligible for an additional $5,000 voucher for that vehicle, while a larger fleet buying several trucks would also receive one $5,000 voucher for the first vehicle purchased. Staff believes this approach will encourage purchase and acceptance of hybrids across more fleets and ultimately help the market for these vehicles grow. Since these vehicles' emission reductions are closely tied to how they are driven, vehicles in smaller fleets (where the owner has "bought into" the vehicle purchase) also have the potential for more air quality benefits than vehicles in larger fleets. To ensure that funds are not monopolized by a single fleet, no entity would be eligible to receive more than 200 hybrid vehicle vouchers.

Qualifying Vehicles

To be considered a hybrid for the purposes of this project, a vehicle would have to draw propulsion energy from onboard sources of stored energy that are both an internal combustion or heat engine using consumable fuel, and a rechargeable energy storage system. A vehicle would also have to meet one of the two following criteria to ensure the hybrid system functions properly and achieves the maximum possible emission reductions:

1. The vehicle is an IRS-approved qualifying heavy- or medium-duty hybrid vehicle which also meets additional ARB requirements (described in Appendix X) to ensure the California-certified engine and after-treatment devices shall continue to function as required; or
2. The vehicle is ARB-certified as a hybrid medium- or heavy-duty vehicle. A hybrid vehicle which is ARB-certified to reduce criteria pollutants is eligible for a higher incentive amount.

This flexible approach is needed to ensure availability of eligible vehicles that achieve real emission reductions in the program's first year. If the HVIP continues as part of the

[1] For the purposes of the HVIP, all vehicles under the fiduciary control of a project participant are considered part of the same fleet. Additional guidance regarding this concept will be provided as part of the HVIP solicitation.

AQIP in FY 2010-11 Funding Plan, staff expects to recommend that only ARB-certified trucks and buses would be eligible for the program next year.

Additional Eligibility Criteria

To be eligible for a voucher, staff recommends that the hybrid vehicle and purchaser must meet the following requirements:

1. The vehicle must have a gross vehicle weight rating (GVWR) of at least 10,000 pounds, and must be used for commercial purposes.
2. The chassis must be titled and licensed in California, and the vehicle must be California-registered.
3. The purchaser must be: a) a California-based business, non-profit, or government entity, or b) a business, non-profit, or government entity operating in California for at least two years prior to the vehicle purchase order.
4. The purchaser must commit to keep the new vehicle for at least five years after the vehicle delivery date.
5. One-hundred percent of the vehicle's operation must occur within California for at least five years after the vehicle delivery date.

Project Solicitation

The HVIP solicitation would be open to public agencies or non-profit agencies with heavy-duty vehicle or air quality expertise. An agency would be chosen by ARB via a competitive solicitation and be responsible for implementing the HVIP statewide. The selected agency would also be responsible for program outreach, with outreach efforts targeting air basins with the worst air quality. Staff's proposed project solicitation criteria are described in Appendix X, and a proposed project solicitation schedule is included in Appendix Y. Allowable costs for administration and outreach for this project would be capped at five percent.

Hybrid Truck and Bus Voucher Incentive Project Q & A

How were vehicle incentive amounts determined?

Hybrid trucks and buses can provide fuel cost savings to fleet owners over time due to these vehicles' fuel economy benefits. However, it would take a typical vehicle purchaser six to ten years to recoup these savings, assuming the cost of diesel is $3.50 per gallon. On average, fleets can make the business case for an up-front investment if the investment can be recouped within a three to five year period. An incentive for about half the incremental cost of a hybrid truck and bus purchase cost is therefore needed to reduce the potential payback period accrued from fuel cost savings from six to ten years to three to five years. The incentive amounts identified in this Funding Plan reflect approximately half the incremental purchase cost of these vehicles, based upon data provided by vehicle manufacturers and other stakeholders.

What are the criteria pollutant benefits of hybrid trucks and buses?

tbd

Are hybrid trucks and buses required to be ARB-certified to be sold in California?
ARB requires that all truck and bus *engines* be certified to be eligible for sale in California. Hybrid vehicles are not required to be ARB-certified as long as they use an ARB-certified engine. However, ARB has a process for certifying hybrid trucks and buses to ensure vehicle and engine durability, and that the emission reductions from the engine and after-treatment are maintained in a hybrid platform. No medium- or heavy-duty hybrid vehicles are ARB certified (as of March 1, 2009), but several have applied and are being evaluated for certification.

Does ARB require that hybrid trucks and buses be ARB-certified to be eligible for the HTIP?
To jump start the program, staff is recommending the HTIP provide two options for determining vehicle eligibility. First, hybrid trucks or buses which are ARB-certified would be eligible for the base voucher amount plus an extra $5,000. This additional $5,000 reflects both the additional manufacturer cost in certifying the vehicle (which could be reflected in the vehicle price), as well as the additional certainty associated with ARB-certified emission reduction and warranty requirements. Secondly, vehicles which are on the IRS list of vehicles eligible for a federal tax credit would be eligible for funding if they meet additional ARB criteria to ensure the vehicle emission reductions are achieved and maintained. These additional criteria are:

1. The vehicle must use a California certified engine.
2. The engine and vehicle primary intended service class must match (LHDDE is used in vehicle with GVWR of 14,001-19,500 lbs, MHDDE of 19,501-33,000, and HDDE of >33,000). (a few thousand pounds over each class range is ok)

3. No modifications to the engine hardware and related aftertreatment. The vehicle must meet the engine manufacturer's build requirements.
4. No modification to the engine software calibrations. The vehicle must meet the engine manufacturer's build requirements.
5. The hybrid vehicle operation must not change the engine's certified regeneration cycles/events (vehicle must be representative of engine's regeneration adjustment factors (UAF/DAF)).
6. The hybrid vehicle operation is capable to meet the engine's temperature requirements (ADT).
7. The engines AECD criteria must remain the same during hybrid operations. (The hybrid vehicle must not operate most of the time in modes where AECDs reduce the effectiveness of emission controls and thus emissions would increase.)

ARB will work with vehicle manufacturers and other stakeholders prior to the HVIP solicitation to determine how the above criteria can be reported in a simple and user-friendly manner. Staff expects that if the HVIP is funded in FY 2010-11, all vehicles will be required to be ARB-certified to receive funding.

What is ARB's process for certifying a medium- or heavy-duty hybrid vehicle?

tbd

Are plug-in hybrid trucks and buses eligible for the HVIP?
Yes, plug-ins that meet the definition of a hybrid truck or bus identified in Chapter X are eligible for the HVIP. Staff will work with hybrid technology and vehicle manufacturers to ensure the HVIP solicitation includes project criteria to allow funding for plug-in medium- and heavy-duty hybrids.

How many vehicles need to be produced before production costs come down significantly?

Significant vehicle production cost savings can be accrued when a hybrid systems manufacturer is able to move from small scale production to produce 2,000 to 3,000 units per year nationally. Hybrid vehicle manufacturers have indicated that once about 10,000 units are produced nationally, hybrid truck and bus price should come down to the point that these vehicles are cost-competitive with their diesel counterparts (when fuel cost savings are considered).
Does this refer to 2,000- 3,000 units of the same vehicle?

What impact will potential funding for hybrid trucks and buses in the federal stimulus package have on this program?
tbd

Can local or federal incentive funds be mixed with HVIP funds?

The HVIP is intended to allow public agencies and private fleets to augment HVIP funds with their own funding. Examples of funds that could be combined with the HVIP include:

- Lower-Emission School Bus Program: The Lower-Emission School Bus Program (LESBP) provides up to $140,000 per bus to help replace an existing older school bus with a new diesel or alternative fueled school bus. However, this funding amount does not cover the cost of a typical hybrid school bus, which typically costs about $200,000. The HVIP would allow for LESBP and HVIP funds to be combined to pay for up to the full cost of a new hybrid school bus.
- Local Air District Funds: Local air districts may opt to augment HVIP vouchers with additional funding for hybrid trucks or buses in their district, effectively offering an additional buy-down of the vehicle incremental cost.
- Federal Stimulus Package: The American Recovery and Investment Act of 2009 has over $1 billion in funds nationally for energy conservation and air quality improvement incentives. Local air districts, public agencies, and public fleets may combine federal hybrid truck and bus funding with HVIP funding to further buy-down the incremental cost of these vehicles. This ability to combination state and federal hybrid trucks and buses incentive funding will help ensure more federal dollars are directed to California fleets by further reducing the purchase price of these vehicles.

Details regarding combination of HVIP funds with other funding sources are to be included in the HVIP solicitation.

What are the vehicle purchaser reporting requirements for the HVIP?
Hybrid truck and bus purchasers must submit a usage survey three times – at one, three, and five years after funding. This brief survey will help verify funded vehicles are being kept in California, and be used in estimating program emission benefits. The survey will be sent to the program participant at the appropriate intervals.

Why are participating hybrid trucks and buses required to operate in California 100 percent of the time?

The HVIP is intended to be as to be straightforward and simple as possible for vehicle purchasers, with the minimal recordkeeping and monitoring requirements that still ensure emission benefits for California. Compliance with a requirement that a vehicle remain in California 100 percent of the time is easier to monitor and enforce than a requirement for some lesser percentage. The vast majority of vehicles participating in the HVIP in FY 2009-10 are likely to be urban work vehicles, delivery vans, and other vehicles that wouldn't typically travel out of state. Staff is committed to working with stakeholders prior to issuing project solicitations to evaluate whether to provide case-by-case flexibility for fleets operating near border regions or in other specific situations.

Who is eligible to apply for this project?

Public agencies (such as local air districts) and non-profit agencies would be eligible to apply for this project.

Is there a match funding requirement for this project?

The public or non-profit agency selected for this project would not be required to provide matching funds. However, vehicle purchasers would generally provide project co-funding by providing part of the new vehicle's incremental cost.

What criteria will be used to score applications for this project?

The HVIP would be one statewide project. Applications would be scored according to the following criteria:

Scoring Criteria	**Points**
Demonstrable Resources and Experience with Hybrid Technology, Manufacturers and Vendors to Successfully Implement a California Statewide Program	30 points
Project Implementation Plan	15 points
Contribution to Regional Air Quality Improvements	10 points
Potential Emission Reductions	10 points
Cost-Effectiveness	10 points
Project Simplicity and Transparency	10 points
Application Completeness	10 points
Ability to Promote the Use of Alternative Fuels and Vehicle Technologies	5 points
TOTAL	100